

1 STATE OF NEW MEXICO  
2 WATER QUALITY CONTROL COMMISSION

3  
4 IN THE MATTER OF PETITION TO AMEND  
5 SURFACE WATER QUALITY STANDARDS  
6 20.6.4 NMAC

WQCC 14-05 (R)

7  
8 New Mexico Environment Department,  
9  
10 Petitioner.

11 **DIRECT TESTIMONY OF JODEY KOUGIOULIS**  
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15 **I. INTRODUCTION**

16 My name is Jodey Kougioulis and I am currently employed as an Environmental Scientist  
17 and serve as the Quality Assurance Officer for the New Mexico Environment Department  
18 (“NMED”), Surface Water Quality Bureau (“SWQB”). I am presenting this written testimony on  
19 behalf of the SWQB concerning changes to language in Section 20.6.4.97 New Mexico  
20 Administrative Code (“NMAC”) and a proposal to amend the Surface Water Quality Standards for  
21 twenty (20) non-perennial stream segments and classify each as ephemeral surface waters of the  
22 State pursuant to Subsection C of 20.6.4.15 NMAC.

23 I will first provide some background on the use of the State of New Mexico’s Hydrology  
24 Protocol (“HP”) and how it is used to determine the hydrologic classification of streams,  
25 specifically ephemeral streams, under Subsection C of 20.6.4.15 NMAC. I will then provide  
26 specific testimony on the proposal for recommendations based on the HP UAA for twenty (20)  
27 ephemeral stream segments associated with thirteen (13) National Pollutant Discharge  
28 Elimination System (“NPDES”) permitted facilities throughout New Mexico.

29 Deborah Sarabia, an Environmental Scientist with the Assessment and Total Maximum  
30 Daily Load (“TMDL”) Team of the SWQB, will provide testimony on four ephemeral stream

1 segments in the Pecos River basin and in the Tularosa and Mimbres closed basins. Kris Pintado,  
2 the Water Quality Standards Coordinator, will present testimony on five ephemeral stream  
3 segments associated with the Chino Mines property in the Mimbres River Basin, and on changes to  
4 Sections 20.6.4.98 and -.99 NMAC.

## 6 **II. QUALIFICATIONS**

7 I hold a Bachelor of Science degree in Environmental Engineering from Montana Tech. I  
8 am currently employed as the Quality Assurance Officer for the SWQB, a position I have held  
9 since November 2010. As the Quality Assurance Officer I am responsible for assessing and  
10 approving the SWQB's procedures and quality assurance/quality control measures so that  
11 environmental data collection efforts conducted by the SWQB are consistent, coordinated, and in  
12 accordance with established procedures, plans, standards, and criteria. Additional responsibilities  
13 are to assist with development and implementation of surface water quality standards by analyzing  
14 data, researching federal/state requirements, and responding to public comments. Prior to joining  
15 the SWQB, I was the Water Resource Manager for the Pueblo of Sandia. Previous to that, I was a  
16 Hydrologist for the Pueblo of Santa Anna where I worked with legal staff to develop, establish, and  
17 protect water rights and negotiate the terms of water right disputes and settlements. I have held  
18 positions as a Hydrologist for the United States Forest Service where I assessed the cumulative  
19 watershed impacts of land management activities and forest practices on water quality, soil and  
20 riparian resources, and hydrologic function. I have also worked as a Hydrologic Technician for the  
21 National Park Service where I conducted water quality monitoring through the collection and  
22 analysis of water quality and aquatic biological samples, physical parameter measurements, water  
23 quantity measurements on stream, rivers, and reservoirs. My resume is complete, accurate, and up  
24 to date, and is included as SWQB Exhibit 40.

**III. BACKGROUND AND PURPOSE**

The application of the HP in the Use Attainability Analysis (“UAA”) process under Subsection C of 20.6.4.15 NMAC requires a brief summary of the approach utilized by the SWQB and supported by the United States Environmental Protection Agency (“EPA”). Amendments to the state’s water quality standards during the 2005 Triennial Review addressed the applicability of beneficial designated uses to non-perennial and perennial waters that “are not included in a classified water of the state in Section 20.6.4.101 through Section 20.6.4.899 NMAC.” The state followed with additional amendments during the 2009 Triennial Review to demonstrate the presumption of Clean Water Act (“CWA”) §101(a)(2) uses under Subsection H of 20.6.4.11 NMAC, which states:

**“H. Unclassified Waters of the State:** Unclassified waters of the state are those surface waters of the state not identified in 20.6.4.101 through 20.6.4.899 NMAC. An unclassified surface water of the state is presumed to support the uses specified in Section 101(a)(2) of the federal Clean Water Act. As such, it is subject to 20.6.4.98 NMAC if non-perennial or subject to 20.6.4.99 NMAC if perennial. The commission may include an ephemeral unclassified surface water of the state under 20.6.4.97 NMAC only if a use attainability analysis demonstrates pursuant to 20.6.4.15 NMAC that attainment of CWA §101(a)(2) uses is not feasible.”

These amendments to the water quality standards allow for the use of the HP to support a UAA for ephemeral waters under Subsection C of 20.6.4.15 NMAC and to determine the appropriate designated uses for waters under Sections 20.6.4.97 – .99 NMAC. These amendments were approved and adopted by the Water Quality Control Commission (“WQCC”), effective December 1, 2010 and approved by the USEPA on April 12, 2011. The process for implementing

1 the HP was approved as an appendix to the SWQB's Water Quality Management Plan/Continuing  
2 Planning Process ("WQMP/CPP") document by the WQCC on May 10, 2011, and by the EPA on  
3 December 23, 2011. In accordance with Subsection C of 20.6.4.15 NMAC, the HP can be used to  
4 provide technical support for a UAA to determine the hydrology of unclassified waters:

5 "C. If a use attainability analysis based on the department's *hydrology protocol* (latest  
6 edition), approved by the commission, demonstrates to the satisfaction of the department  
7 that Section 101(a)(2) uses are not feasible in an ephemeral water body, the department  
8 shall post the use attainability analysis on its water quality standards website and notify its  
9 interested parties list of a 30-day public comment period. After reviewing any comments  
10 received, the department may proceed by submitting the use attainability analysis and  
11 response to comments to region 6 EPA for technical approval. If technical approval is  
12 granted, the water shall be subject to 20.6.4.97 NMAC. The use attainability analysis, the  
13 technical approval, and the applicability of 20.6.4.97 NMAC to the water shall be posted on  
14 the department's water quality standards website. The department shall periodically petition  
15 the commission to list ephemeral waters under Subsection C of 20.6.4.97 NMAC and to  
16 incorporate changes to classified segments as appropriate."

17 Pursuant to this Subsection, the SWQB is petitioning the WQCC to list those waters  
18 previously granted technical approval by the USEPA as ephemeral under Subsection C of  
19 20.6.4.97 NMAC. Once approved by the WQCC and adopted as standards, the SWQB will submit  
20 the revised water quality standards (as will be published in the New Mexico Register) to USEPA  
21 for formal review and final approval action under §303(c) of the CWA.

22 The SWQB is also proposing to remove the term "unclassified" for those waters that have  
23 been characterized and determined as ephemeral under the HP, and the addition of the term  
24 "surface" to be consistent with the term "surface water(s) of the state" defined in Subsection S of

20.6.4.7 NMAC.

#### IV. PROPOSAL

The first part of the proposed revisions is to remove the term “unclassified” and add the word “surface” to “waters”. The second part of the proposal is to list the twenty (20) streams determined as ephemeral under Subsection C of 20.6.4.97 NMAC.

**20.6.4.97 EPHEMERAL WATERS - Ephemeral ~~unclassified~~ surface waters of the state as identified below and additional ephemeral waters as identified on the department’s water quality standards website pursuant to Subsection C of 20.6.4.15 NMAC.**

**A. Designated Uses:** livestock watering, wildlife habitat, limited aquatic life and secondary contact.

**B. Criteria:** the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses.

**C. Waters:**

(1) the following waters are designated in the Rio Grande basin:

(a) Cunningham gulch from Santa Fe county road 55 upstream 1.4 miles to a point upstream of the LAC Minerals mine, identified as Ortiz Mine on USGS topographic maps;

(b) an unnamed tributary from Arroyo Hondo upstream 0.4 miles to the Village of Oshara water reclamation facility outfall;

(c) an unnamed tributary from San Pedro creek upstream 0.8 miles to the PAA-KO community sewer outfall;

(d) Inditos draw from the crossing of an unnamed road along a power line one-

1 quarter mile west of McKinley county road 19 upstream to New Mexico highway 509;

2 \_\_\_\_\_ (e) an unnamed tributary from the diversion channel connecting Blue canyon  
3 and Socorro canyon upstream 0.6 miles to the New Mexico Firefighters Academy treatment  
4 facility outfall;

5 \_\_\_\_\_ (f) an unnamed tributary from the AMAFCA Rio Grande south channel  
6 upstream of the crossing of New Mexico highway 47 upstream to I-25;

7 \_\_\_\_\_ (g) the south fork of Cañon del Piojo from Canon del Piojo upstream 1.2 miles  
8 to an unnamed tributary;

9 \_\_\_\_\_ (h) an unnamed tributary from the south fork of Cañon del Piojo upstream 1  
10 mile to the Resurrection mine outfall;

11 \_\_\_\_\_ (i) Arroyo del Puerto from San Mateo creek upstream 6.8 miles to the  
12 Ambrosia Lake mine entrance road;

13 \_\_\_\_\_ (j) an unnamed tributary from San Mateo creek upstream 1.5 miles to the Roca  
14 Honda mine facility outfall in NPDES permit number;

15 \_\_\_\_\_ (k) San Isidro arroyo from the Lee Ranch mine facility outfall upstream to  
16 Tinaja arroyo;

17 \_\_\_\_\_ (l) Tinaja arroyo from San Isidro arroyo upstream to Mulatto canyon; and

18 \_\_\_\_\_ (m) Mulatto canyon from Tinaja arroyo upstream to 1 mile northeast of the  
19 Cibola national forest boundary.

20 (2) the following waters are designated in the **Pecos river basin**:

21 \_\_\_\_\_ (a) an unnamed tributary from Hart canyon upstream 1 mile to South Union  
22 road; \_\_\_\_\_

23 (3) the following waters are designated in the **Canadian river basin**:

24 \_\_\_\_\_ (a) Bracket canyon upstream of the Vermejo river;

1        (b) an unnamed tributary from Bracket canyon upstream 2 miles to the Ancho  
2        mine; and

3        (c) Gachupin canyon from the Vermejo river upstream 2.9 miles to an unnamed  
4        west tributary near the Ancho mine outfall.

5        (4) in the **San Juan river basin** an unnamed tributary of Kim-me-ni-oli wash upstream  
6        of the mine outfall.

7        (5) the following waters are designated in the **Little Colorado river basin**:

8        (a) Defiance draw from County Road 1 to upstream of West Defiance Road; and

9        (b) an unnamed tributary of Defiance draw from McKinley County Road 1  
10       upstream to New Mexico Highway 264.

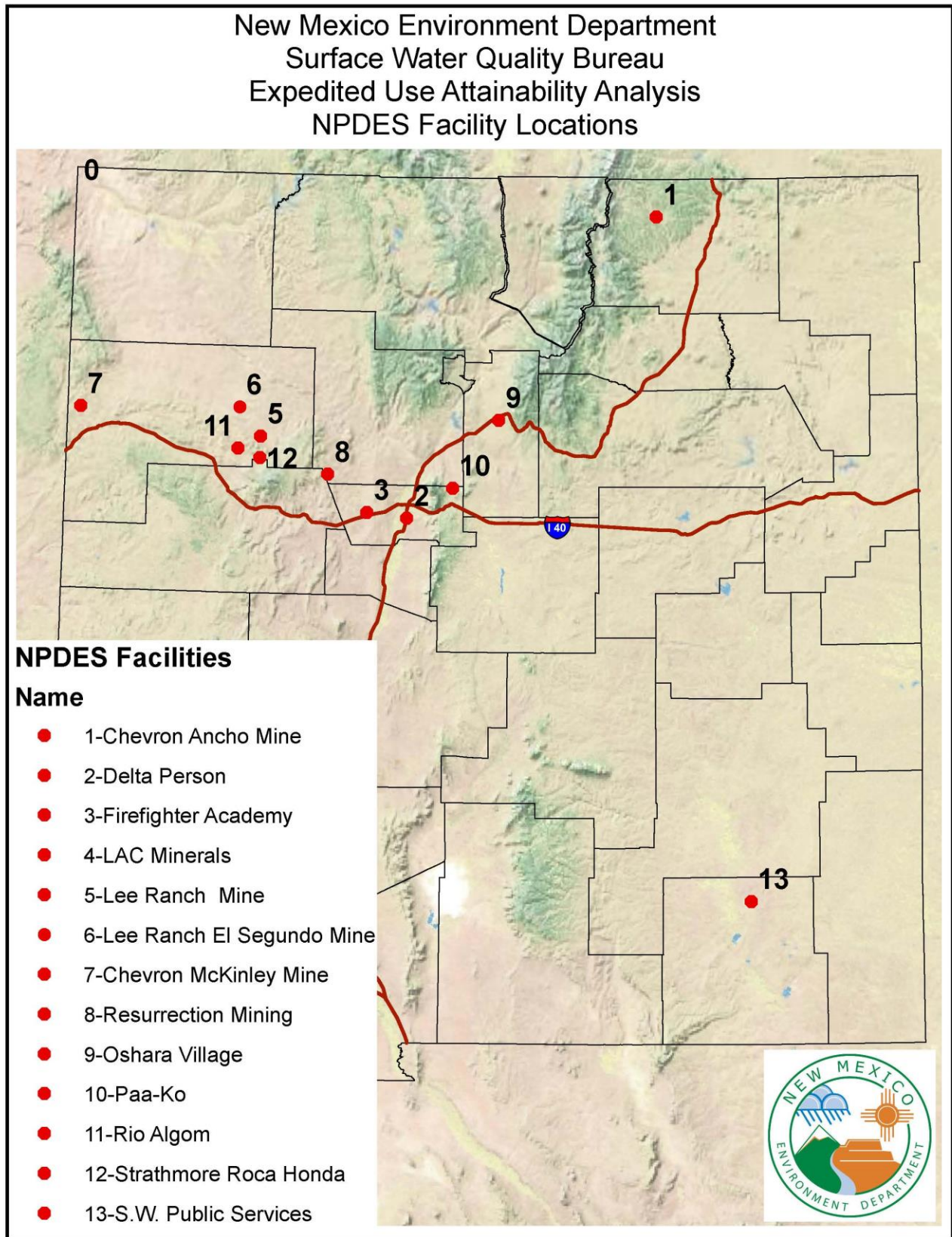
11  
12    **V. BASIS FOR PROPOSAL**

13       The CWA § 101(a)(2) and Section 20.6.4.6 NMAC state that, wherever attainable, water  
14       quality shall provide for the protection and propagation of fish, shellfish and wildlife, and for  
15       recreation in and on the water. Together with the federal regulation under 40 Code of Federal  
16       Regulation (“CFR”), Part 131.10(j), these regulations effectively establish the “rebuttable  
17       presumption” that designated CWA §101(a)(2) uses are attainable unless demonstrated otherwise  
18       under Section 20.6.4.15 NMAC and 40 CFR § 131.10 (g). Section 20.6.4.98 NMAC has designated  
19       uses of wildlife habitat, primary contact, and marginal warmwater aquatic life that are considered  
20       CWA § 101(a)(2) uses. In accordance with the state water quality standards under Subsection A of  
21       20.6.4.15 NMAC and the federal regulations under 40 CFR § 131.10(j), to remove a CWA §  
22       101(a)(2) designated use, or to adopt a subcategory of a CWA § 101(a)(2) use requiring less  
23       stringent criteria requires a UAA analysis. According to 40 CFR § 131.10(g), states may remove a  
24       designated use that is not an existing use, as defined in Subparagraph 20.6.4.7.E (3) NMAC and in

1 40 CFR § 131.3, or establish sub-categories of a use if the state can demonstrate that attaining the  
2 designated use is not feasible because one or more factors in 40 CFR § 131.10(g) (1) – (6). Specific  
3 to this proposal is 40 CFR § 131.10(g) (2) in which the “natural, ephemeral, intermittent or low  
4 flow conditions or water levels prevent the attainment of the use, unless these conditions may be  
5 compensated for by the discharge of sufficient volume of effluent discharges without violating  
6 State water conservation requirements to enable uses to be met.”

7 The SWQB applied the HP and conducted a UAA to determine the most protective  
8 attainable aquatic life and contact uses for twenty (20) stream segments associated with the  
9 thirteen (13) NPDES permitted facilities located throughout New Mexico. Originally, eighteen  
10 (18) stream segments were delineated but due to the stream length and geographic features of the  
11 Mulatto Canyon stream segment, further delineation was necessary resulting in two additional  
12 stream segments, ultimately increasing the total proposed ephemeral stream segments from  
13 eighteen (18) to twenty (20). The figure below (Figure 1) illustrates the generalized location of the  
14 UAA and affected NPDES facilities:





**Figure 1. UAA NPDES Facility Locations**

1           The HP UAA concluded that the assessed stream segments are naturally ephemeral, and  
2           that the designated uses applicable to Section 20.6.4.97 NMAC are the appropriate and attainable  
3           uses. Attainment of the CWA §101(a)(2) uses for these ephemeral waters is not feasible due to the  
4           factor identified in 40 CFR §131.10(g)(2): *natural, ephemeral, intermittent, or low flow*  
5           *conditions or water levels prevent the attainment of the use.* Therefore, the SWQB proposes these  
6           twenty (20) stream segments be added as described in the proposal for inclusion in Section  
7           20.6.4.97 NMAC as ephemeral waters of the state.

## 8 9   **VI.   HP USE AND UAA EXAMINATION**

10           The stream segment reaches associated with the thirteen (13) NPDES facilities were  
11           selected for application of the HP based on geographic location, historic observations of  
12           prolonged dryness, lack of aquatic habitat, limited facility discharges, and the NPDES facilities'  
13           expressed need to have accurate criteria designations associated with their permits. The HP is  
14           designed to document the hydrological, geomorphic, and biological indicators of the persistence  
15           of water. To determine the appropriate hydrologic regime, designated uses and corresponding use-  
16           specific criteria applied to the proposed stream segments, the SWQB conducted a Level 1 HP  
17           Evaluation for each.

18           Data gathered during Level 1 HP Evaluations should, in most cases, provide enough  
19           information to give a clear indication of the hydrological status of ephemeral streams. The  
20           required information collected under the Level 1 HP Evaluation was recorded on a "*Cover Sheet*"  
21           and "*Hydrology Determination Field Sheet*" ("*Field Sheet*") for each HP study reach of the  
22           twenty (20) ephemeral stream segments listed in the proposal. As an example, a Field Sheet for a  
23           study segment on Mulatto Canyon Creek is shown in SWQB Exhibit 41 and is titled the "Mulatto  
24           Canyon Creek Field Sheet." The HP encourages the collection of as much physical and

1 geographic information about the drainages and region prior to initiating field evaluations. For  
2 this study, the NPDES permits for the associated facilities, previous site investigation information,  
3 aerial photos from sources including Google Earth<sup>®</sup>, and Geographic Information System (“GIS”)  
4 analysis of available stream data were reviewed. This information guided the selection of relevant  
5 stream segment HP reaches to be evaluated in the field. In accordance with the HP, climate and  
6 meteorological data were reviewed to document that conditions during the study period were  
7 appropriate to apply the HP, and that extreme drought conditions were not prevailing in the area  
8 nor were there recent precipitation events that would potentially bias the outcome of the HP  
9 assessment. As required in the HP, drought conditions were assessed through the use of the 12-  
10 month Standardized Precipitation Index (“SPI”), which summarizes drought conditions based on  
11 the previous 12 month period. If extreme drought conditions are present, as characterized by an  
12 SPI of -1.5 or less, HP guidance is to delay field work until the SPI value no longer indicates  
13 extreme drought conditions. For these HP Level 1 HP Evaluations, the SPI was greater than -1.5  
14 and within recommendations for application of the HP.

15 After the preliminary identification of potential HP UAA facility sites, NPDES facilities  
16 were contacted and access to the site was coordinated. Reconnaissance surveys of the watersheds  
17 were conducted by driving and walking the area prior to conducting the HP on a specific  
18 representative reach. Each HP reach was selected as representative of the segment based on  
19 characteristics such as similar geology, sinuosity, and vegetation of the watercourse. Photographs  
20 and Global Positioning System (“GPS”) way points were taken during each assessment. Field  
21 Sheets were completed to document the scoring of attributes and subsequent hydrologic  
22 determinations in accordance with the HP. Where available and appropriate, the National  
23 Hydrography Dataset (“NHD”) shapefiles were used to depict existing stream channels on site  
24 location maps. Additionally, the locations of permitted water wells recorded with the New Mexico

Office of State Engineer (“OSE”) were mapped in relation to each proposed ephemeral stream segment. All available OSE well information regarding diversion rights and pumping data were used in conjunction with the required HP Level 1 Evaluations, GIS data, aerial photos, and NPDES permit information to determine the appropriate hydrologic classification.

A summary of the scoring interpretation and hydrologic determination ranges based on use of the Level 1 HP Evaluation is shown in Table 1.

**Table 1. Summary of Level 1 Evaluation Score Interpretation**

Waterbody Type	Level 1 Total Score	Hydrology Determination
<b>Ephemeral</b>	<b>Less than 9.0*</b>	<b>Stream is ephemeral</b>
	$\geq 9.0$ and $< 12.0$	Stream is recognized as intermittent until further analysis indicates that the stream is ephemeral
<b>Intermittent</b>	$\geq 12.0$ and $\leq 19.0$	<b>Stream is intermittent</b>
	$> 19.0$ and $\leq 22.0$	Stream is recognized as perennial until further analysis indicates that the stream is intermittent
<b>Perennial</b>	<b>Greater than 22.0</b>	<b>Stream is perennial</b>

\* If there are aquatic macroinvertebrates and/or fish the stream is at least intermittent.

For this particular application of the HP and UAA, all twenty (20) stream segments scored two (2) or less on the HP Level 1 Evaluations. All cover sheets, field sheets, photos, and supporting observations and data are included in the UAA. SWQB Exhibit 42.

## **VII. PUBLIC PARTICIPATION**

On July 27, 2012, the SWQB solicited public comments by initiating a 30 day public comment period on the draft UAA for the Unclassified NPDES Non-Perennial Watercourses. The SWQB received two comments: one from Xcel Energy; and one from Amigos Bravos. All

1 comments were carefully considered and addressed. The SWQB determined that no change to the  
2 draft UAA document was necessary based on comments received. SWQB Exhibit 43. In  
3 accordance with Section 20.6.4.10.C NMAC, the UAA for the twenty (20) ephemeral stream  
4 segments listed in the proposal and the SWQB's "Response to Comments on the July 2012 Draft  
5 Use Attainability Analysis for 18 Unclassified Non-Perennial Watercourses with NPDES Permitted  
6 Facilities" were submitted to USEPA on October 11, 2012 for technical approval. SWQB Exhibit  
7 44. The USEPA provided technical approval on January 30, 2013, concluding that the uses and  
8 criteria apply as described in Section 20.6.4.97 NMAC for all regulatory purposes under the CWA.  
9 SWQB Exhibit 45.

## 11 **VIII. CONCLUSION**

12 In accordance with the UAA process, the SWQB finds that for the twenty (20) ephemeral  
13 stream segments listed in the proposal:

- 14 • The recreational use that is currently being achieved is that of secondary contact;
- 15 • The aquatic life use currently being achieved is limited aquatic life;
- 16 • The aquatic life use of marginal warmwater is not attainable due to naturally  
17 ephemeral conditions; and
- 18 • The highest attainable aquatic life use is limited aquatic life.

19 The SWQB finds that it is not feasible to attain the designated use of marginal warmwater  
20 and primary contact because of factor 40 CFR §131.10(g)(2): *natural, ephemeral or intermittent*  
21 *or low flow conditions or water levels prevent the attainment of the use.* Therefore, these stream  
22 segments should be re-classified under Section 20.6.4.97 NMAC as ephemeral waters, with the  
23 attainable uses designated as limited aquatic life use and secondary contact. For the limited  
24 aquatic life use, the acute aquatic life criteria of Subsection I and J of Section 20.6.4.900 NMAC

1     apply. These designated uses and criteria are appropriate based on the hydrology and will not  
2     under or over protect the twenty (20) ephemeral stream segments.

3             The SWQB is petitioning the WQCC to list these waters that were technically approved by  
4     USEPA as ephemeral under Subsection C of 20.6.4.97 NMAC. Once approved by the WQCC and  
5     adopted as standards, the SWQB will submit the revised water quality standards (as will be  
6     published in the New Mexico Register) to USEPA for formal review and final approval action  
7     under CWA § 303(c). This concludes my testimony.